



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Kenneth Rhodes *et al.*

Serial No.: 09/670,756

Filed: September 27, 2000

For: **POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR**

Attorney Docket No.: MNI-070CP4

Group Art Unit: 1646

Examiner: Murphy, Joseph F.

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Commissioner for Patents
Office of Initial Patent Examination
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Washington, D.C. 20231

Certificate of First Class Mailing

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May 2, 2002

Date of Signature and of Mail Deposit

By:

Maria C. Laccotripe, Ph.D.
Attorney for Applicants
Limited Recognition Under 37 C.F.R.
§10.9(b)

RESPONSE TO "RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT"

Dear Sir:

This is a response to the "Response to Request for Corrected Filing Receipt" mailed from the United States Patent and Trademark Office on April 15, 2002.

REMARKS

The Response to Request for Corrected Filing Receipt states that

continuity claimed under 35 U.S.C. 1.12(e) cannot be added to the Filing Receipt without the applicant supplying the relationship (continuation, divisional, or continuation-in-part) in an Application Data Sheet or amendment to the first page of the specification.

Applicants provide herewith a copy of the first page of the specification, as filed, which sets forth the priority documents and their relationship to the instant

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application, as well as a copy of the Continuation Application Transmittal which indicates that the instant application is a "continuation-in-part of the pending prior application serial no. 09/399,913, filed on September 21, 1999 entitled POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR."

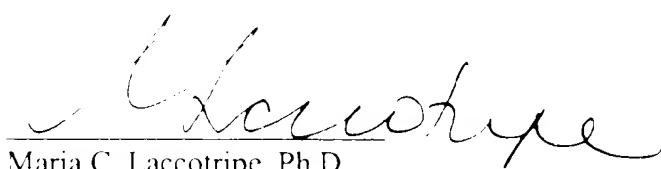
Accordingly, Applicants request that the priority information on the Official Filing Receipt be corrected such that it reads as follows:

**THIS APPLICATION IS A CIP OF 09/399,913 09/21/1999
WHICH CLAIMS BENEFIT OF 60/110,033 11/25/1998
AND CLAIMS BENEFIT OF 60/109,333 11/20/1998
AND CLAIMS BENEFIT OF 60/110,277 11/30/1998
AND CLAIMS BENEFIT OF 09/298,731 04/23/1999
AND CLAIMS BENEFIT OF 09/350,614 07/07/1999
AND CLAIMS BENEFIT OF 09/350,874 07/09/1999
AND CLAIMS BENEFIT OF 09/400,492 09/21/1999**

SUMMARY

If a telephone conversation with Applicants' Attorney would expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' Attorney at (617) 227-7400.

Respectfully submitted,


Maria C. Laccotripe, Ph.D.
Attorney for Applicants
Limited Recognition Under 37 C.F.R. §10.9(b)

MILLER & MILLER, P.C.
State Street
Boston, MA 02109
Tel. (617) 227-7400

Dated: May 2, 2002



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
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WASHINGTON, DC 20591
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY DOCKET NO/TITLE
09/670,756	09/27/2000	Kenneth Rhodes	MNI-070CP4

CONFIRMATION NO. 6507

000959
LAHIVE & COCKFIELD
28 STATE STREET
BOSTON, MA 02109



OC000000007867357

Date Mailed: 04/15/2002

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Domestic Continuity and Foreign Priority

In response to your request for a corrected Filing Receipt, the Office is unable to comply with the request because:

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- The priority or continuity claim has not been entered because it was not filed during the required time period. Applicant may wish to consider filing a petition to accept an unintentionally delayed claim for priority. See 37 CFR 1.55 or 1.78.
- Continuity claimed under 35 USC 120 cannot be added to the Filing Receipt without the applicant supplying the relationship (continuation, divisional, or continuation-in-part) in an Application Data Sheet or amendment to the first page of the specification.
- A claim for priority cannot be made based on an application filed after the application making the claim.

Domestic and foreign priority claims will not be captured in a provisional application. A divisional application will not be considered for the benefit of the filing date of any other application. See 35 USC 111(b)(7) and 37 CFR 1.53(c)(4).

- A domestic continuity claim cannot be made to a foreign application and the filing receipt will only list the foreign country, application number, and filing date.

Foreign priority will appear on the Filing Receipt in the following order

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Country, Application number, Filing date.

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(703) 308-1202

Receipt

**LAHIVE
&
COCKFIELD**
L L P

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RE: U.S. Continuation-In-Part Patent Application No. 09/670,756
 Title: *POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR*
 Filed: September 27, 2000
 Inventors: Kenneth Rhodes, Maria Betty, Huai-Ping Ling,
 and Wenqian An
Our Reference No.: MNI-070CP4

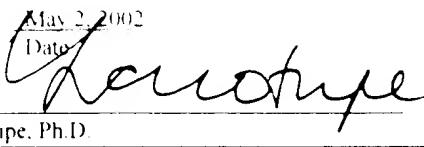
Dear Sir:

I enclose herewith for filing in the above-identified application the following:

1. Response to Response to Request for Corrected Filing Receipt (2 pages);
2. Copy of Response to Request for Corrected Filing Receipt;
3. Copy of the First Page of the Specification;
4. Copy of Continuation-in-Part Transmittal Letter;
5. Statement of Limited Recognition Under 37 CFR §10.9(b) for Maria C. Laccotripe; and
6. Return mailroom postcard.

Please charge any necessary fees to our Deposit Account No. 12-0080. The undersigned requests any extensions of time necessary to respond. A duplicate of this sheet is enclosed.

I hereby certify that this correspondence is deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Office of Initial Patent Examination, Customer Service Center, Washington, DC 20231 on:

May 2, 2002
 Date

 Maria C. Laccotripe, Ph.D.

Respectfully submitted,

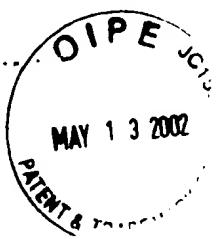
LAHIVE & COCKFIELD, LLP


 Maria C. Laccotripe, Ph.D.
 Limited Recognition Under 37 CFR §10.9(b)
 Attorney for Applicants

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**BEFORE THE OFFICE OF ENROLLMENT AND DISCIPLINE
UNITED STATE PATENT AND TRADEMARK OFFICE**

LIMITED RECOGNITION UNDER 37 CFR § 10.9(b)

Maria C. Laccotripe is hereby given limited recognition under 37 CFR §10.9(b) as an employee of Lahive & Cockfield, LLP, to prepare and prosecute patent applications where the patent applicant is the client of Lahive & Cockfield, LLP, and the attorney or agent of record in the applications is a registered practitioner who is a member of the Lahive & Cockfield, LLP. This limited recognition shall expire on the date appearing below, or when whichever of the following events first occurs prior to the date appearing below: (i) Maria C. Laccotripe ceases to lawfully reside in the United States, (ii) Maria C. Laccotripe's employment with Lahive & Cockfield, LLP ceases or is terminated, or (iii) Maria C. Laccotripe ceases to remain or reside in the United States on an H-1 visa.

This document constitutes proof of such recognition. The original of this document is on file in the Office of Enrollment and Discipline of the U.S. Patent and Trademark Office.

Expires: September 4, 2002



Harry I. Moatz
Director of Enrollment and Discipline

Customer No. 000959

Case Docket No. MNI-070CP4

THE ASSISTANT COMMISSIONER FOR PATENTS
Box Patent Application
Washington, DC 20231

"Express Mail" Mailing Label Number FL 011 360 044 US

Date of Deposit September 27, 2000

I hereby certify that this transmittal letter and the papers referred to as being enclosed therein are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

Signature

Nelson F. Barros

Please Print Name of Person Signing

Sir,

Transmitted herewith for filing is the continuation-in-part patent application of

Inventor(s): Kenneth Rhodes, Maria Betty, Huai-Ping Ling, and Wenqian An

For: POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR

Enclosed are:

This is a request for filing a continuation-in-part divisional application under 37 CFR 1.53(b), of pending prior application serial no. 09/399,913, filed on September 21, 1999 entitled POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR.

- 148 pages of specification, 14 pages of claims, 1 page of abstract.
- 48 sheets of formal drawings (Figures 1-43).
- An unexecuted Declaration, Petition and Power of Attorney.
- 92 pages of sequence listing (numbered 1-92).
- Transmittal Letter for Diskette of Sequence Listing
- Diskette Containing Sequence Listing.
- Statement of Limited Recognition Under 37 C.F.R. §10.9(b)

The filing fee has been calculated as shown below:

(Col. 1)	(Col. 2)
FOR:	NO. FILED NO. EXTRA
BASIC FEE	//////////
TOTAL CLAIMS	54- 20 =34
INDEP. CLAIMS	2 - 3 =0
<input checked="" type="checkbox"/> MULTIPLE DEPENDENT CLAIMS PRESENTED	

* If the difference in Col. 2 is less than zero.

SMALL ENTITY	
RATE	FEES
//////////	\$345.00
x 9=	\$
x 39	\$
+130	\$
TOTAL	\$

OTHER THAN SMALL ENTITY	
RATE	FEES
//////////	\$690.00
x 18=	\$612.00
x 78	\$
+260	\$260.00
TOTAL	\$1562.00

Please charge my Deposit Account No. in the amount of \$
A duplicate copy of this sheet is enclosed

- FILING FEES ARE NOT BEING PAID AT THIS TIME**
- A check in the amount of \$ to cover the filing fee is enclosed
- The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.
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Any additional filing fees required under 37 C.F.R. 1.16

Any patent application processing fees under 37 C.F.R. 1.17

The Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No. _____
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Any patent application processing fees under 37 C.F.R. 1.17

The issue fee set in 37 C.F.R. 1.18 at or before mailing of the Notice of Allowance pursuant to 37 C.F.R. 1.311(b).

Any filing fees under 37 C.F.R. 1.16 for presentation of extra claims.

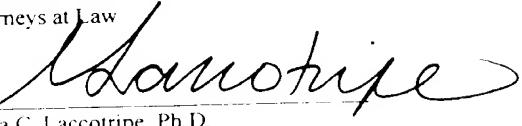
A check in the amount of \$ _____ to cover the recording of assignment documents is also enclosed.

Address all future communications (May only be completed by applicant, or attorney or agent of record) to Amy E. Mandragouras at Customer Number: 000959 whose address is.

Lahive & Cockfield, LLP
28 State Street
Boston, Massachusetts 02109

Date: September 27, 2000

LAHIVE & COCKFIELD, LLP
Attorneys at Law

By 
Maria C. Laccotripe, Ph.D.
Agent for Applicants
Limited Recognition Under 37 C.F.R. §10.9(b)
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Attorney Docket Number: MNI-070CP4

POTASSIUM CHANNEL INTERACTORS AND USES THEREFOR**Related Applications**

This application claims priority to U.S. provisional Application No. 60/110,033, filed on November 25, 1998, U.S. provisional Application No. 60/109,333, filed on November 20, 1998, U.S. provisional Application No. 60/110,277, filed on November 30, 1998, U.S. Patent Application No.: 09/298,731, filed on April 23, 1999, U.S. Patent Application No.: 09/350,614, filed on July 9, 1999, U.S. Patent Application No.: 09/350,874, filed on July 9, 1999, U.S. Patent Application No.: 09/399,913, filed on September 21, 1999, U.S. Patent Application No.: 09/400,492, filed on September 21, 1999, and PCT Application No. PCT/US99/27428, filed on November 19, 1999, incorporated herein in their entirety by this reference.

Background of the Invention

Mammalian cell membranes are important to the structural integrity and activity of many cells and tissues. Of particular interest in membrane physiology is the study of trans-membrane ion channels which act to directly control a variety of pharmacological, physiological, and cellular processes. Numerous ion channels have been identified including calcium, sodium, and potassium channels, each of which have been investigated to determine their roles in vertebrate and insect cells.

Because of their involvement in maintaining normal cellular homeostasis, much attention has been given to potassium channels. A number of these potassium channels open in response to changes in the cell membrane potential. Many voltage-gated potassium channels have been identified and characterized by their electrophysiological and pharmacological properties. Potassium currents are more diverse than sodium or calcium currents and are further involved in determining the response of a cell to external stimuli. The diversity of potassium channels and their important physiological role highlights their potential as targets for developing therapeutic agents for various diseases.

The most well-known class of voltage-gated potassium channels is the Shaker gene family. The prototypical member of this class is the protein encoded by the Shaker gene in *Drosophila melanogaster*. Proteins of the Shal or Kv4 family are a type of voltage-gated potassium channels that underlies many of the native A type currents that have been recorded from different primary cells. Kv4 channels have a major role in

